



WNMU TV 13 Transitions to ToolsOnAir to Broadcast Two HD Channels and One SD Channel 24/7

April 15, 2016 Vienna, Austria / NAB Las Vegas, Nevada — WNMU Channel 13 transitions to ToolsOnAir at a fraction of the cost of competitive offerings. The full solution with Cantemo Portal and Archiware P5 integration allows Channel 13 to maintain their vital role in broadcasting the best in national PBS programming and local content without compromising their offering.

Based in Marquette Michigan and broadcasting from studios on the campus of Northern Michigan University, PBS affiliate WNMU-TV 13 serves Michigan's Upper Peninsula and Northeastern Wisconsin delivering a vibrant mix of national PBS programming and locally produced shows.

Like all PBS affiliates, WNMU-TV 13 plays an important role in the local community. Affiliated with Northern Michigan University, the studios are used in training the next generation of broadcast professionals, for example with the production of Public Eye News a daily 15-minute news broadcast produced, directed and hosted by an all-student crew. Students are responsible for all aspects of the newscast: anchoring the news desk, writing stories, operating cameras and directing the show.



In 2014 Grant Guston, Chief Engineer, started looking for a successor for the station's existing Sundance/Omneon setup. At that time WNMU-TV 13 was broadcasting two SD channels and one HD channel 24/7. The existing solution was nearing end-of-life and maintaining the installation would not be feasible much longer.

We visited Grant, to learn more about what was important for him in selecting a replacement and why he went with ToolsOnAir.

ToolsOnAir: You looked at a number of solutions before considering ToolsOnAir. What were some of the suppliers that you considered?

Grant Guston: I looked at a number of options and offerings, but did not find anything I felt comfortable with. We seriously contemplated becoming a centralcast partner of either WGBH or WJCT. Ultimately, we weren't sold on either and found them infeasible over the long term. WGBH/Sony provided a model where we would enjoy savings year-over-year after the initial commitment, but that wasn't enough.

We also considered Heartland Video Systems' solution which was built on the premise of the CentralCast-in-a-rack model for individual stations, but we found that lacking. The Nverzion automation system was serviceable but rather antiquated and the interface crude.

Finally we thought about building our own station-in-a-rack based on Grass Valley's ITX platform, but this too proved too expensive an option.

ToolsOnAir: As you were making your considerations an act of nature accelerated your decision process. Tell us a little about what happened.

Grant: On January 21st 2015 the water main in the campus building housing the station burst and a subsequent sudden power outage severely damaged the already deprecated setup. Fortunately, I was able to repair much of our system, but we were seriously hamstrung. The situation was now acute. Most critically, we needed a new automation solution as well as shared storage.



Our biggest problem was, of course budget, or lack thereof. Insurance reparations and other funding we could scrape together amounted to less than \$ 425,000. Most broadcasters and vendors I spoke with didn't believe we could do anything for less than \$ 1,000,000 without significantly compromising our station; for example offering one channel as opposed to three, or sacrificing redundancy. I was confident, however, that we could find a state-of-the-art solution that would fit our budgetary limitations without sacrificing our existing capabilities.

ToolsOnAir: You had a pretty clear idea of what your ideal solution would be capable of. What did you envision?

Grant: I envisioned a solution utilizing off-the-shelf components, where each component would be solid-state, be proven in a 24/7 broadcast application, and cost less than \$5K to replace. Each component would also ensure parity throughout the system, be easy to re-purpose, and/or provide further redundancy.

Most importantly we would be able to construct and maintain the complete system ourselves, allowing us to be as self-reliant as possible, and take full ownership of the solution. If that wasn't already enough, I also wanted multi-format video support with tight BXF/metadata standards adherence as well as closed captioning support on both ingest and playout.

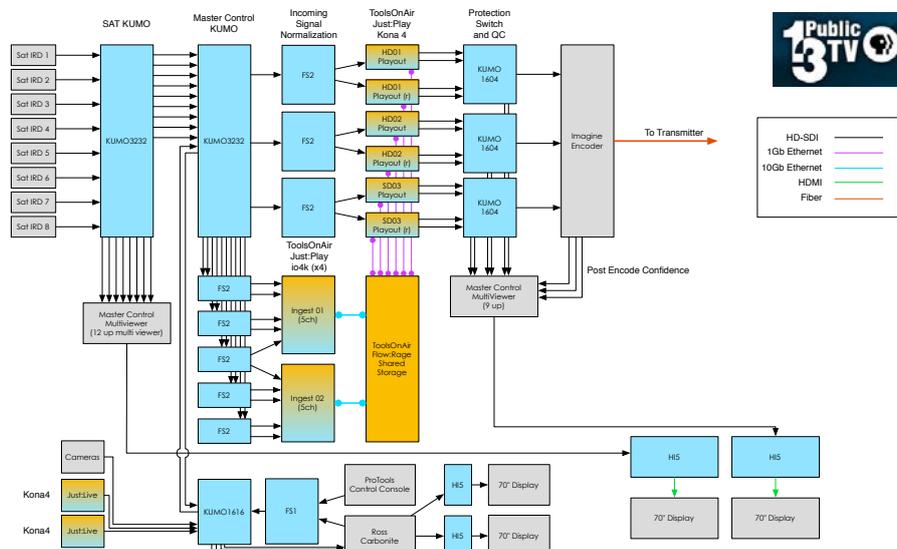
ToolsOnAir: Who did you finally turn to fulfill your requirements?

Grant: I placed a call to Craig Frankenstein, Director of New Media at AVI Systems. AVI places high value on open solutions utilizing off-the-shelf hardware so they understood where I was coming from. Craig introduced me to ToolsOnAir and vouched for their solution, their development team, and their industry partnerships. He also showed me how the solution fit with my philosophy.

All playout hardware consists of Apple Mac minis, coupled with AJA Kona 4 video cards. Six of these provide three primary and three redundant channels. The ToolsOnAir playout software **just:play** is tied to a BXF schedule importer, provided by **kinetic:bridge** which processes ProTrack traffic logs.

just:in, the software on the ingest side uses redundant Apple Mac Pros, with AJA io4K video cards. Everything is imported directly to our Cantemo Portal MAM, which has direct communication to our Telestream Episode Engine Server for transcoding, and to Archiware P5 for archiving, which is attached to a LTO5 archive system.

All media is served and ingested to a ToolsOnAir **flowrage:store** central NAS storage server on a 10 Gigabit network.



ToolsOnAir: It is almost a year since you started with the transition. What is the situation today?

Grant: Now WNMU is a year removed from a near shutdown. We are running two 1080i HD channels and one down-converted SD channel, 24/7. Prior to this overhaul we were primarily still an up-converted SD station and this solution not only helped us transition to HD, but all hardware and software has future-proofed us by being 4K ready.

ToolsOnAir playout also inherently outputs independent audio channels and two layers of graphics, still or animated, along with propagation of RSS feeds. We also run our EAS alerts through it and each channel is also output as a streaming video. The bottom line, is that we are definitely doing more with less.

ToolsOnAir has been a great partner and their support and development teams are always available to aid us with anything we desire. We are in a much more feasible management vs. failure based structure for maintenance and we have dramatically reduced our support contract costs. Most important is that we feel truly in control of our station. We have retained our people, which is a major factor, as we employ, mentor and facilitate NMU's Media Production and New Technology major providing students with state-of-the-art training and real-world experience in modern broadcast workflows.



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About ToolsOnAir

ToolsOnAir Broadcast Engineering has redefined the TV station of tomorrow, providing powerful Mac and Linux based solutions that integrate storage, ingest, playout and real-time graphics into a streamlined workflow **based:onCore**[®] - a new revolutionary software architecture for multipurpose broadcast.

About WNMU Channel 13

Based in Marquette Michigan PBS affiliate WNMU-TV 13 broadcasts two 1080i HD channels and one SD channel, 24/7 from studios on the campus of Northern Michigan University. Delivering a vibrant mix of national PBS programming and locally produced content to Michigan's Upper Peninsula and Northeastern Wisconsin, WNMU-TV 13 is an important information source in the local community.